

MANAGING SOLID WASTE

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Indiana Composting Facilities: 2005 Update

This volume updates volume 9, number 1 of *Managing Solid Waste*, "Indiana Composting Facilities: 2003 Update." See volume 3, number 2 of *Managing Solid Waste*, "Indiana Composting Facilities" for a detailed summary and history of Indiana composting facilities from 1994 through 1997.

Composting allows for the reclamation and reuse of materials such as discarded vegetative matter that would otherwise end up in Indiana's landfills and incinerators. The Indiana Department of Environmental Management (IDEM) administers a registration and annual reporting program for facilities composting vegetative matter. Historically, Indiana composting facilities process between 200,000 and 275,000 tons of vegetative matter annually (although 2000 through 2005 has seen this amount increase significantly) mostly leaves, wood, brush, and mulch. Between 35 and 45 percent of the compost produced each year is given away by local governments as part of their reuse and recycling efforts.

This paper is the 16th in the series *Managing Solid Waste* by the IDEM Office of Land Quality. For more information, contact the Facilities Data Analysis Section at (317) 233-4624. A copy of this paper can be downloaded at www.IN.gov/idem/programs/land/pubsforms/papers.html.

INTRODUCTION

Composting is the transformation of vegetative matter and other organic materials into a humus (or compost) better suited as fertilizer than the original materials. The transformation is accomplished through natural biochemical processes. Composting is one of the main processes used to reclaim and reuse vegetative matter. Other processes include mulching and land application.

According to most recent U.S. Environmental Protection Agency statistics (1999, updated September 2001), yard wastes make up approximately 12% by weight of the municipal solid waste stream nationally. This includes mostly vegetative matter like leaves, brush, wood, and grass. The diversion of these materials from final disposal can increase the life of Indiana landfills. In addition, the re-use of discarded vegetative matter as either compost or mulch decreases the use of chemical fertilizers and other landscaping products that can have large negative environmental impacts.

At the end of 2005, there were 121 registered composting facilities in Indiana. There has been a steady increase in registrations since 1994, the first year registration was required, when 50 facilities were registered. Almost three quarters of Indiana counties have at least one composting facility. It is important to note that several facilities were inactive at some point during the last five years. Materials received from 1999-2005 totals are listed separately from previous year totals because prior to 1998, facilities submitted totals in volume units. Beginning in 1998, facilities submitted all report data in tons. Thus, 1998-2005 figures are not comparable with those in previous years.

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Indiana Composting Facilities

Table 1. Tons of Materials Received by Indiana Composting Facilities in 2004 and 2005			
County	Facility	Tons Received 2004	Tons Received 2005
Adams	Decatur Compost Facility	798	814
Adams	Berne WWTP City Of	895	923
Allen	National Serv-All Compost	7,340	6,543.00
Allen	Advanced Turf Management Inc	62	0
Allen	New Haven Utility Maintenance Center	567	585
Allen	Ringenberg Garten Haus	2,522	5,650.00
Bartholomew	Bartholomew County SWMD	9,400	9,769.00
Blackford	Hartford City of	3,090	2,175.00
Boone	Green Cycle Whites Town Site	24,089	10,750.00
Boone	Lamb Farms, Inc	4,939	2,736.00
Cass	Cass Co. SW Composting Site	5,012	4,544.00
Clark	Superior Compost Company	41,492	5,636.00
Clark	Koetter & Smith	8,033	7,400.00
Clark	Earth First of Kentuckiana Inc	34,024	44,380.00
Clark	Nugent Sand Company	9,060	7,122.00
Clay	Craig Park Compost	40	125
Daviess	Washington Composting Facility City Of	2,574	2,087.00
Dearborn	Greendale Composting	602	277
Dekalb	Dekalb Co. Yard Waste Composting	2,823	1,667.00
Dubois	Ferdinand Street Department	22	23
Elkhart	Goshen Composting Facility City Of	3,188	3,509.00
Elkhart	Elkhart Co. Landfill	148	134
Fayette	Connersville Street Dept Compost Facility	1,505	1,550.00
Floyd	Earth First of Kentuckiana Inc.	2,357	9,271.00
Fountain	Fountain Co. Recycling Station/Compost Site	40	33
Fountain	Harrison Steel Castings Compost Site	19	20
Franklin	Brookville WWTP Compost Facility	96	99
Fulton	County Line Landfill	0	35,435.67
Grant	Bank View Farms Compost	1,781	450
Grant	Grant Co Compost Facility	427	1,590.00
Hamilton	Creative Landscaping	2,151	1,688.00
Hamilton	Musselman Farms Landscape Supply LLC	800	638
Hendricks	Rays Composting Facility	570	660
Hendricks	Plainfield Correctional Facility	2,190	361
Hendricks	Look E Farms Compost	80	180
Henry	New Castle Correctional Facility	132	71.2
Howard	Kokomo Yard Waste Composting City Of	6,450	7,185.00
Huntington	Huntington City Landfill & Composting Facility	802	1,114.00
Huntington	Warren Utilities	53	43
Jackson	Seymour City Composting Facility	2,086	2,711.00
Jasper	Demotte Composting Facility #2 Brookhill	160	150
Jay	Portland Compost Facility City of	0	12
Jefferson	Madison Transfer Station City Of	1,302	10,142.00
Jefferson	Hanover Composting Facility Town Of	29	31
Johnson	New Whiteland WWTP	221	176
Johnson	Dougherty Contracting Inc Composting Facility	0	163
Kosciusko	Superior Excavating Soils And Services Llc	495	316
Kosciusko	Warsaw Compost City Of	1,149	1,010.00
Kosciusko	North Webster Town Of	78	6
Lagrange	Lagrange County Yard Waste Composting	1,653	2,024.00
Lagrange	Shipshewana WWTP Composting	49	42
Lake	Griffith Landfill Composting	2,834	2,577.00
Lake	Stuhlmacher Soil Service, Inc.	156	63
Lake	Enterprise Properties	4,699	5,034.00

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Lake	East Chicago Municipal SW TS	15,707	14,683.00
Lake	Good Earth Farms	25,000	0
Lake	Hobart Silt Settlement City Of	1,272	1,430.00
Lake	Lake Station Compost Facility	2,677	5,310.00
Lake	Merrillville Compost Facility	1,125	1,685.00
La Porte	Westville Correctional Facility Compost Site	7,865	5,551.00
Lawrence	Lawrence County SWMD Compost Facility	0	520
Madison	Pendleton Correctional Facility Compost	618	598
Madison	Adams Compost Facility	30,000	30,000.00
Madison	Anderson Composting Facility	446	21,203.00
Marion	Greencycle of Indiana	15,102	0
Marion	Southside Landfill Composting	4,289	6,574.00
Marion	Cumberland Compost Town Of	360	34.2
Marion	Tiffany Lawn and Garden Supply Inc	52,300	57,760.00
Marion	Indy Parks Forestry	66,980	122,900.00
Marion	Greencycle Troy Avenue Composting Facility	6,096	9,830.00
Marshall	Van Vactor Farms Inc.	400	499
Monroe	Good Earth Composting	4,032	12,099.00
Monroe	Topsoil Composting Service	9,510	0
Morgan	Greendell Farm	240	195
Noble	Ligonier Compost	516	1,248.00
Ohio	Rising Sun Compost	317	375
Pike	Velpen Solid C/D Site	1,528	0
Porter	Valparaiso Municipal Composting Site	6,658	4,870.00
Porter	Crocker Composting Site	2,850	1,345.00
Porter	Boone Grove Hwy Garage	156	253
Porter	Ogden Dunes Compost Site	0	78
Pulaski	Francesville Town Of	238	158
Pulaski	Winamac Town Of	254	254
Putnam	Putnamville Correctional Facility Compost	13,249	11
Randolph	Randolph Farms Inc Composting	2,015	23,577.00
Randolph	Winchester Compost Facility	487	1,272.00
Ripley	Sunman Civil Town Of	11	12
St. Joseph	Organic Resources	46,367	42,355.00
St. Joseph	Household Hazardous Waste & Recycling Center	4,080	833
Shelby	Caldwell Landfill CGS Inc Composting	3,406	4,641.00
Spencer	Rockport City Of	0	30
Starke	Knox Compost Facility City Of	0	248
Steuben	Steuben County Yard Waste Composting	1,912	1,792.00
Steuben	Hamilton Town of Yard Waste Lot	0	275
Sullivan	Wabash Valley Correctional Facility	480	663
Tippecanoe	Tippecanoe County Compost Facility	416	510
Tippecanoe	Purdue University	6,857	1,349.00
Tippecanoe	Soilmaker Compost Facility	0	5,229.00
Tipton	Tipton Compost Facility	1,226	1,397.00
Vanderburgh	Laubscher Meadows Composting Facility	8,974	6,938.00
Vanderburgh	Botanical Service Ctr	291	307
Vigo	Sycamore Ridge Landfill	1,303	0
Wabash	The Compost	235	1,517.00
Warrick	Warrick Co Disposal & Recycling Center	1,487	1,717.00
Washington	Washington County SWMD Organic Facility	3,300	675
Washington	H&H Premium Organic Soil	25	35
Wayne	New Paris Pike Landfill	4,936	2,624.00
White	Transfarm, Inc.	5,400	9,600.00
Whitley	Morsches Park Compost Facility	495	418
TOTAL		558,572	609,172

NOTE: Facilities currently registered but not receiving compost in 2004 and 2005 are not listed in Table 1.

Indiana Composting Facilities

REGULATORY AND OPERATIONAL REQUIREMENTS

In 1992, the Indiana Legislature approved Public Law 84, now codified as IC 13-20-9. This law includes a restriction on disposal of vegetative matter. The ban applies to residential, commercial, and industrial sources. IDEM has issued guidance to interpret what materials are subject to the ban. (See Table 2. More information regarding the yard waste ban appears in the nonrule policy document “Important Notice Regarding the Yard Waste Disposal Ban,” available from IDEM’s Office of Land Quality.) This ban makes composting facilities an essential facet of solid waste management.












Composting facilities are required by state law to register with IDEM. Each registration is valid for five years, and can be renewed by submitting an updated registration form to IDEM 90 days prior to expiration.

There is no fee for registration or renewal. Composting operations that process less than 2,000 pounds of vegetative matter during a year are exempt from these registration requirements.

In addition to the registration requirements, the law requires that the facility operator submit an annual report to IDEM. The Composting Facility Annual Report indicates the amount of vegetative matter processed during the previous year, and the final use of the compost. The first reporting year was 1994.

MATERIALS PROCESSED

The increase in materials received in 2005 over 2004 receipts is due to a net increase in intake by existing facilities (55 reporting increases to only 45 reporting decreases from 2004 totals) and a net increase of facilities accepting compost

Table 2. Summary of Indiana’s Yard Waste Ban		
Materials SUBJECT to Yard Waste Disposal Ban		Leaves
		Brush
		Woody vegetative matter greater than 3 feet in length
Materials EXEMPT from Yard Waste Disposal Ban		Grass
		Woody vegetative matter bagged, bundled, or otherwise contained and less than 3 feet in length
		Very small amounts of vegetative matter bagged, bundled, or otherwise contained and less than 3 feet in length AND combined with other solid waste
		Christmas trees
		House plants
		Vegetable food scraps
		Vegetative by-products not derived from landscaping maintenance or land clearing projects such as from flower shops and funeral homes
		IDEM-approved composted vegetative matter used as cover material for solid waste landfill

(nine facilities accepted compost in 2005 but not in 2004; only six facilities accepted compost in 2004 but not in 2005). Tons reported accepted is an approximation for two reasons:

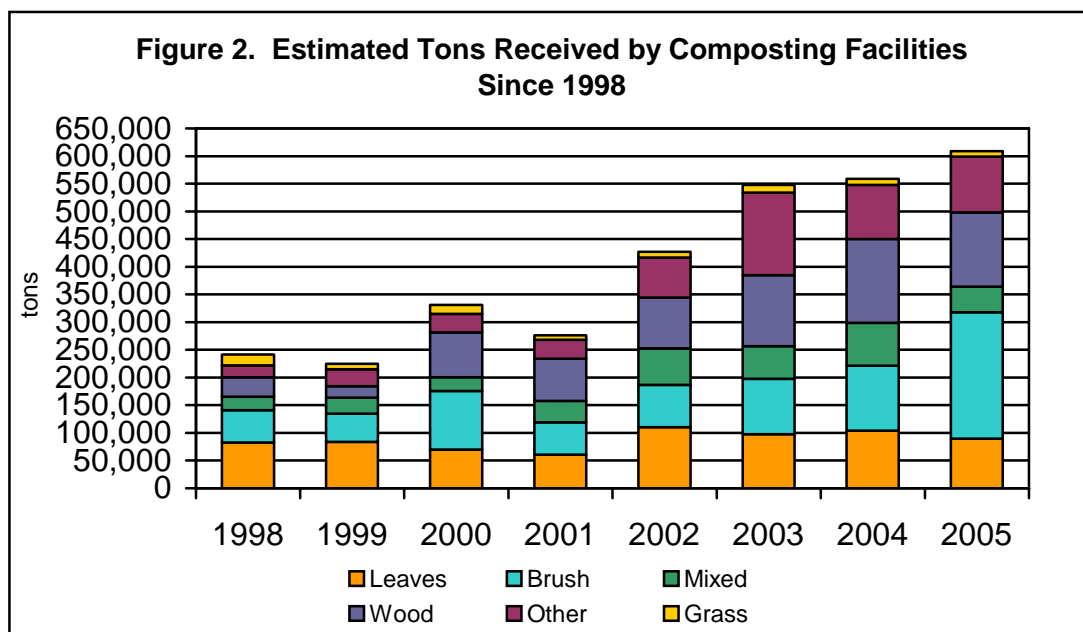
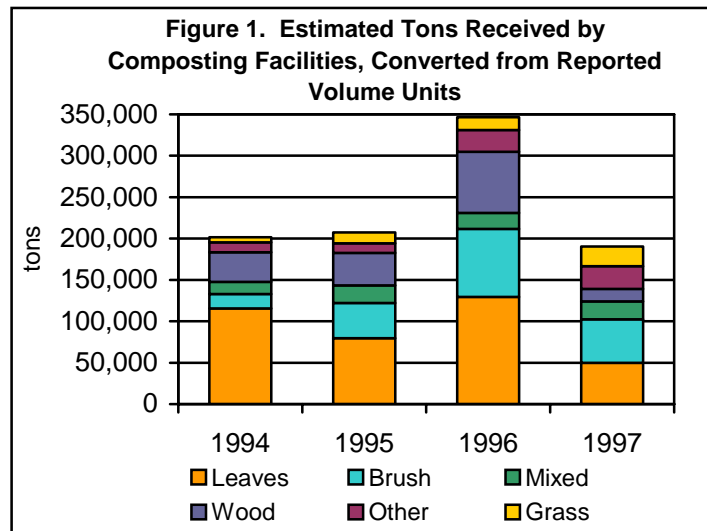
1. Beginning in 1998, composting facilities are required to report their intake in tons. Many facilities do not have weigh scales, and must convert volume measurements to weight based on conversion factors such as those in Table 3. Volume-to-weight conversion factors vary widely depending on the composition, moisture content, and compaction rate of the vegetative matter.
2. Some loads of materials are received in a manner that prohibits documentation by type and/or weight, especially small loads from residential customers. In 2005, 42 of the 103 active facilities or 41% received such undocumented loads.

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Table 3. Examples of Conversion Factors for Compostable Materials (Cubic Yards Per Ton)

Material Description	Loose	Compacted
brush	6.67	2.20
brush, shredded	5.37	--
cardboard	6.67	--
food waste	1.30	--
grass	5.00	2.50
leaves	10.00	5.00
leaves, shredded	6.70	5.71
mixed yard waste, fall	8.10	3.60
mixed yard waste, summer	5.70	2.60
paper	4.00	--
whole wood	7.14	5.88
wood, chipped	4.00	3.60

As shown in Figures 1 and 2, leaves accounted for a significant portion of total receipts from 1994 through 1999 and again in 2002. In 2000 and 2001, brush and wood accounted for the majority of receipts by weight. In 2005 brush and wood comprised half of the total compostable material receipts.

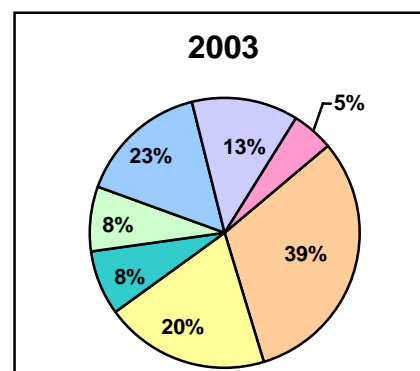
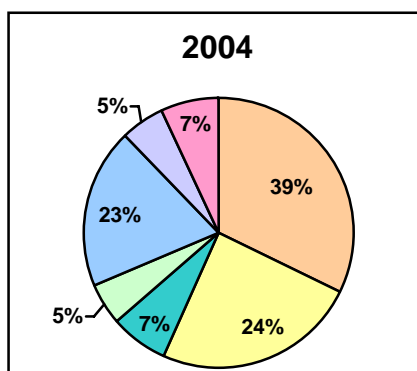
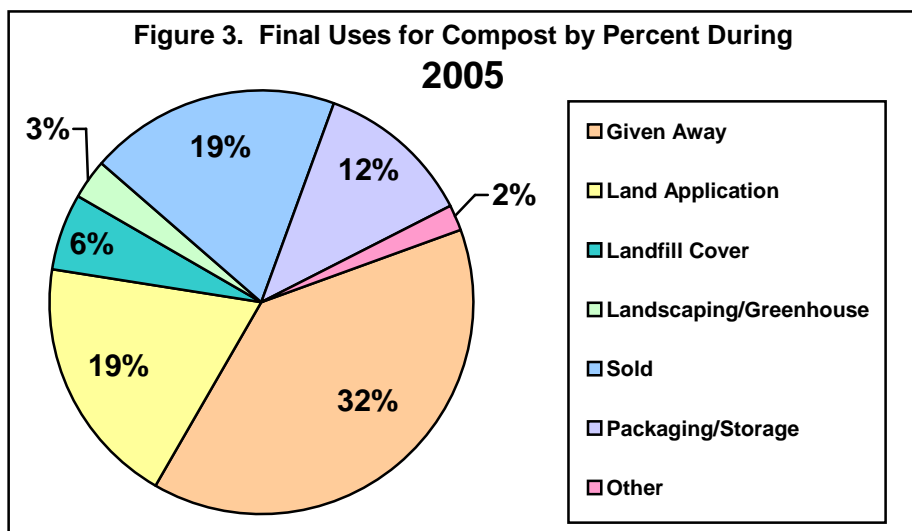


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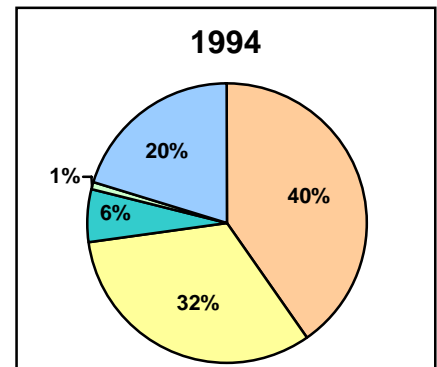
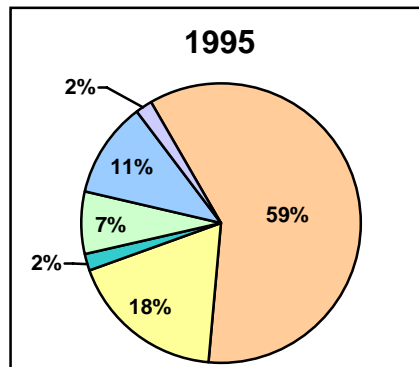
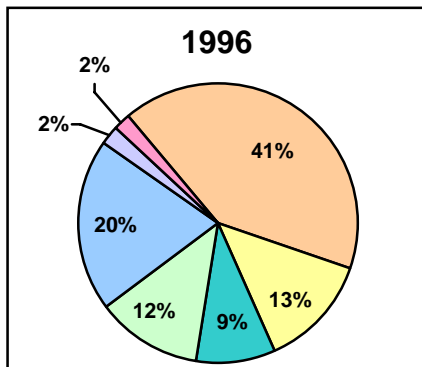
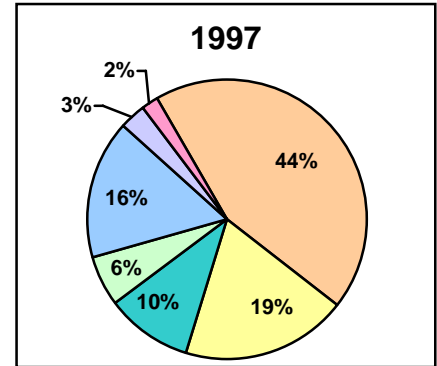
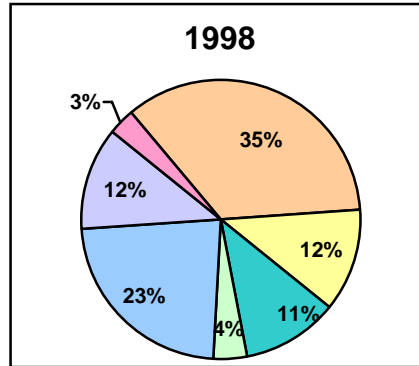
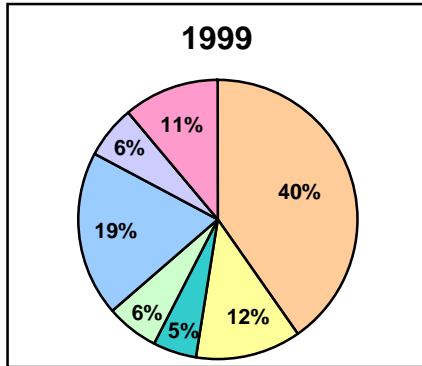
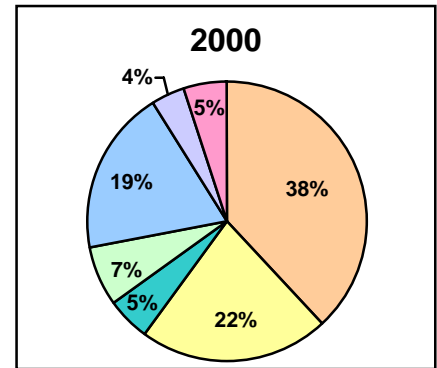
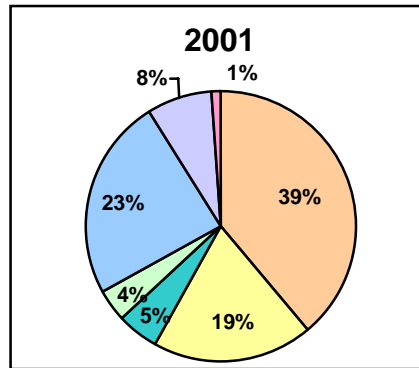
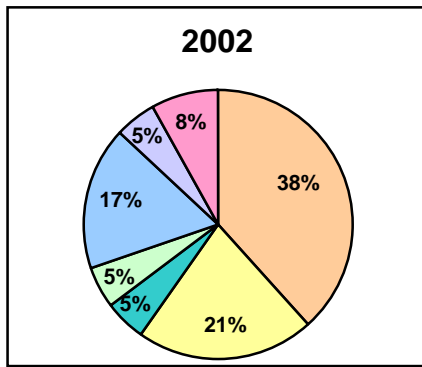
FINAL USES OF COMPOST AND OTHER PRODUCTS

Composting facilities may produce finished compost in as short as three months or as long as two years, depending on the type of raw materials, ambient temperature, and processing methods. At the end of 2005, 37% of the materials managed by Indiana registered composting facilities were still in the process of being converted to compost. Over the last ten years, materials received and still in process of being converted to compost at year-end ranged from 32 to 50%.

Figure 3 shows the final uses of materials that were successfully converted into either compost or mulch during the last twelve years. In 2005, facilities gave away about 39% of total converted product, an increase of about 7% from the amount given away in 2003 and 2004. Facilities giving away product are primarily those run by cities, counties, or solid waste management districts, which comprise just over half of the 103 facilities in Table 1. Only 15 privately-owned facilities gave away about 13% of their product.



Indiana Composting Facilities



REFERENCES AND FURTHER READING

Indiana Environmental Statute IC 13-20-9, *Restrictions on Disposal of Vegetative Matter*

Indiana Department of Environmental Management Nonrule Policy Document, *Important Notice Regarding the Yard Waste Disposal Ban*, January 2000

Indiana Department of Environmental Management and the Indiana Recycling Coalition, *Indiana Yard Waste Solutions*; January 1993

U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, *Municipal Solid Waste in the United States: 2003 Facts and Figures* (www.epa.gov/epaoswer/non-hw/muncpl/msw99.htm)